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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/646,661	CHEUNG ET AL.	
	Examiner	Art Unit	
	Ian N. Moore	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 20-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 20-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *8-21-03* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1-26-2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, embodiment I, with corresponding claims **1-13, 20-58 and 59**, in the reply filed on 5/17/07 is acknowledged.

Claim Objections

2. Claims 12,13,44,45,57 and 58 are objected to because of the following informalities:

Claim 12 recites "**a link**" in line 2. For consistency and clarification with "a link" recited in claim 1, line 1, it is suggested to change "a link" in line 2, to "**said** link".

Claims 31,44 and 57 are also objected for the same reason as set forth above in claim 12.

Claim 13 recites "**a link**" in line 6. For consistency and clarification with "a link" recited in claim 1, line 1, it is suggested to change "a link" in line 6, to "**said** link".

Claims 32,45 and 58 are also objected for the same reason as set forth above in claim 13.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 1-13 and 20-58 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites, "a method of determining an amount of bandwidth...comprising: **determining, based on a user behavior and traffic characteristic**, said amount; and storing said amount in memory". Claim 1 recites, a single mean/step for determining bandwidth based on user behavior and traffic characteristic. Claim 1 covers every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor (i.e. determining bandwidth based on user behavior, traffic characteristic, GoS, QoS, blocking probability, and packet lost probability). In other word, claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor, and the specification fails to support every conceivable structure (means). *In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983).*

Claims 20, 33 and 46 are also rejected for the same reason as set forth above in claim 1.

Claims 2-13, 21-32,32-45,47-58 are also objected since they are depended upon rejected claims 1,20,33 and 46 as set forth above.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. **Claims 20-32** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter since the claim invention fail to fall within any of the categories of patentable subject matter set forth in § 101.

Claim 20 recites, "a **computer-readable medium carrying** one or more sequences of instructions for determining amount of bandwidth..." in line 1-2.

In specification, page 18, paragraph 64 recites, as follows:

"the term "**computer-readable medium**" as used herein refers to any medium that participates in providing instructions to processor 404 for execution. **Such a medium may take many forms, including** but not limited to, non-volatile media, volatile media, and **transmission media**. Non-volatile media includes, for example, optical or magnetic disks, such as storage device 410. Volatile media includes dynamic memory, such as main memory 406. Transmission media includes coaxial cables, copper wire and fiber optics, including the wires that comprise bus 402. **Transmission media can also take the form of acoustic or light waves, such as those generated during radio wave and infrared data communications**."

In specification, page 18, paragraph 65 recites as follows:

"Common forms of **computer-readable media include**, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, or any **other magnetic medium**, a CD-ROM, any other optical medium, punchcards, papertape, any other physical medium with patterns of holes, a RAM, a PROM, and EPROM, a FLASH-EPROM, any other memory chip or cartridge**, a carrier wave as described hereinafter**, or any other medium from which a computer can read."

In view of the above, when considering the claim in light of the specification, "a computer readable medium" is the "a transmission media" which is a signal such as "light waves, radio waves, and/or carrier wave". Thus, claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14.

First, a claimed signal is clearly not a "process" under § 101 because it is not a series of steps. The other three § 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims." 1 D. Chisum, Patents § 1.02 (1994). The three product classes have traditionally required physical structure or material.

Second, "The term machine includes every mechanical device or combination of mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." Corning v. Burden, 56 U.S. (15 How.) 252, 267 (1854). A modern definition of machine would no doubt include electronic devices which perform functions. Indeed, devices such as flip-flops and computers are referred to in computer science as sequential machines. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine.

Third, a "composition of matter" "covers all compositions of two or more substances and includes all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." Shell Development Co. v. Watson, 149 F. Supp. 279, 280, 113 USPQ 265, 266 (D.D.C. 1957), aff'd, 252 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). A claimed signal is not matter, but a form of energy, and therefore is not a composition of matter.

Fourth, the Supreme Court has read the term "manufacture" in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." Diamond v. Chakrabarty, 447 U.S. 303, 308, 206 USPQ 193, 196-97

(1980) (quoting American Fruit Growers, Inc. v. Brogdex Co., 283 U.S. 1, 11, 8 USPQ 131, 133 (1931), which, in turn, quotes the Century Dictionary). Other courts have applied similar definitions. See American Disappearing Bed Co. v. Arnaelsteen, 182 F. 324, 325 (9th Cir. 1910), cert. denied, 220 U.S. 622 (1911). These definitions require physical substance, which a claimed signal does not have. Congress can be presumed to be aware of an administrative or judicial interpretation of a statute and to adopt that interpretation when it re-enacts a statute without change. Lorillard v. Pons, 434 U.S. 575, 580 (1978). Thus, Congress must be presumed to have been aware of the interpretation of manufacture in American Fruit Growers when it passed the 1952 Patent Act. A manufacture is also defined as the residual class of product. 1 Chisum, § 1.02[3] (citing W. Robinson, The Law of Patents for Useful Inventions 270 (1890)).

A product is a tangible physical article or object, some form of matter, which a signal is not. That the other two product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal, a form of energy, does not fall within either of the two definitions of manufacture. Thus, a signal does not fall within one of the four statutory classes of § 101.

On the other hand, from a technological standpoint, a signal or a record carrier encoded with functional descriptive material is similar to a computer-readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with a computer. In other words, a computer is able to execute the encoded functions, regardless of whether the format is a disk or a signal.

In view of the above analysis, it is clear that claim 20 is ineligible for patent protection because they do not fall within any of the four statutory classes of § 101, namely, process, machine, manufacture, or composition of matter.

Claims 21-32 are also rejected since they are depended upon rejected base claim as set forth above.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1,8,20,27,33,40,46 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Soumiya (US005583857A).

Regarding Claim 1, Soumiya discloses a method of determining an amount of bandwidth needed on a link (see FIG. 1, 18, ATM network system processing the methods/steps of bandwidth calculating for a line/link 22, also see FIG. 19-20; see col. 9, line 5-15; see col. 16, line 46-54; see col. 16, line 64-69), the method comprising:

determining (see FIG. 1, determining/calculating by required bandwidth calculator 13), based on user behavior (see FIG. 1, according to difference of average cell rate Ra and peak cell rate Rp which is declared by the user (i.e. user behavior/activities/act relative to the line/connection) from the cell rate comparator 11) and traffic characteristics (see FIG. 1, and traffic class from traffic class judging portion 12), said amount (see FIG. 1, calculated/determined bandwidth); see col. 9, line 6-26; and

storing said amount in memory (see FIG. 1, storing calculated bandwidth in the estimated bandwidth storage portion 15; see col. 9, line 25-30; also see FIG. 18, storing bandwidth in memory 25; see col. 16, line 55-63).

Regarding Claim 8, Soumiya discloses wherein determining said amount is based on quality of service (QoS) factor (see col. 10, line 30-60; calculating bandwidth to guaranteed QOS level/factor).

Regarding Claim 20, Soumiya discloses a computer-readable medium carrying one or more sequences of instructions (see FIG. 18, memory 25) for determining an amount of bandwidth needed on a link (see FIG. 1, 18, for calculating bandwidth for a line/link 22, also see FIG. 19-20; see col. 9, line 5-15; see col. 16, line 46-54), which instructions, when executed by one or more processors (see FIG. 18, processed/executed by a combined controlling system of controller 23 and admission controller 24), cause the one or more processors to carry out the steps of (see FIG. 1, 18, causing the combined controlling system to process the methods/steps for ATM network system, also see FIG. 19-20; see col. 9, line 5-15; see col. 16, line 64-69):

determining (see FIG. 1, determining/calculating by required bandwidth calculator 13), based on user behavior (see FIG. 1, according to difference of average cell rate Ra and peak cell rate Rp which is declared by the user (i.e. user behavior/activities/act relative to the line/connection) from the cell rate comparator 11) and traffic characteristics (see FIG. 1, and traffic class from traffic class judging portion 12), said amount (see FIG. 1, calculated/determined bandwidth); see col. 9, line 6-26; and

storing said amount in memory (see FIG. 1, storing calculated bandwidth in the estimated bandwidth storage portion 15; see col. 9, line 25-30; also see FIG. 18, storing bandwidth in memory 25; see col. 16, line 55-63).

Regarding Claim 27, Soumiya discloses wherein determining said amount is based on quality of service (QoS) factor (see col. 10, line 30-60; calculating bandwidth to guaranteed QOS level/factor).

Regarding Claim 33, Soumiya discloses an apparatus for determining an amount of bandwidth needed on a link (see FIG. 1, 18, ATM network system processing for bandwidth calculating for a line/link 22, see col. 9, line 5-15; see col. 16, line 46-54; see col. 16, line 64-69), comprising:

means for determining (see FIG. 1, required bandwidth calculator 13 calculates/determines), based on user behavior (see FIG. 1, according to difference of average cell rate Ra and peak cell rate Rp which is declared by the user (i.e. user behavior/activities/act relative to the line/connection) from the cell rate comparator 11) and traffic characteristics (see FIG. 1, and traffic class from traffic class judging portion 12), said amount (see FIG. 1, calculated/determined bandwidth); see col. 9, line 6-26; and

means for storing said amount in memory (see FIG. 1, storing calculated bandwidth in the estimated bandwidth storage portion 15; see col. 9, line 25-30; also see FIG. 18, storing bandwidth in memory 25; see col. 16, line 55-63).

Regarding Claim 40, Soumiya discloses wherein determining said amount is based on quality of service (QoS) factor (see col. 10, line 30-60; calculating bandwidth to guaranteed QOS level/factor).

Regarding Claim 46, Soumiya discloses an apparatus for determining an amount of bandwidth needed on a link (see FIG. 1, 18, 27, ATM network system 3C-n processing for bandwidth calculating for a line/link 22, see col. 9, line 5-15; see col. 16, line 46-54; see col. 16, line 64-69), comprising:

a network interface (see FIG. 18, Line Interface 22n; see FIG. 27) that is coupled to a data network (see FIG. 27, connecting/coupling to ATM network 3) for receiving one or more packet flows therefrom (see col. 1, line 50 to col. 2, line 60; see col. 16, line 46-65; to receiving flows of cells);

a processor (see FIG. 18, a combined controlling system of controller 23 and admission controller 24); and one or more stored sequences of instructions (see FIG. 18, memory 25 stores the sequence of instructions/programs) which, when executed by the processor (see FIG. 18, processed/executed by a combined controlling system of controller 23 and admission controller 24), cause the processor to carry out the steps of (see FIG. 1, 18, causing the combined controlling system to process the methods/steps for ATM network system, also see FIG. 19-20; see col. 9, line 5-15; see col. 16, line 64-69):

determining (see FIG. 1, determining/calculating by required bandwidth calculator 13), based on user behavior (see FIG. 1, according to difference of average cell rate Ra and peak cell rate Rp which is declared by the user (i.e. user behavior/activities/act relative to the line/connection) from the cell rate comparator 11) and traffic characteristics (see FIG. 1, and traffic class from traffic class judging portion 12), said amount (see FIG. 1, calculated/determined bandwidth); see col. 9, line 6-26; and

storing said amount in memory (see FIG. 1, storing calculated bandwidth in the estimated bandwidth storage portion 15; see col. 9, line 25-30; also see FIG. 18, storing bandwidth in memory 25; see col. 16, line 55-63).

Regarding Claim 53, Soumiya discloses wherein determining said amount is based on quality of service (QoS) factor (see col. 10, line 30-60; calculating bandwidth to guaranteed QOS level/factor).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 2, 21, 34 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Kraushaar (US 4,200,771).

Regarding Claim 2, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average time between arrivals of calls.

However, measuring/determining an average time between arrivals of calls, which is well known in the art as interarrival time, which is used to computes Erlang (i.e. call hours). In particular, Kraushaar teaches an average time between arrivals of calls made by one or more users using said link (see col. 1, line 60-45; see col. 2, line 60-67; average time between call

arrivals is called interval arrival, note that each call is associated with a user/subscriber using a line/link/connection to computes Erlang for congestion control).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of calls or interarrival time, as taught by Kraushaar in the system of Soumiya, so that it would provide accurate measuring/determining of congestion and non-congestion periods; see Kraushaar abstract; see col. 2, line 1-41; also by measuring/determining interarrival time, it enables to computes Erlang to determine link/lines/trunk utilizations.

Regarding Claim 21, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average time between arrivals of calls.

However, measuring/determining an average time between arrivals of calls, which is well known in the art as interarrival time, which is used to computes Erlang (i.e. call hours). In particular, Kraushaar teaches an average time between arrivals of calls made by one or more users using said link (see col. 1, line 60-45; see col. 2, line 60-67; average time between call arrivals is called interval arrival, note that each call is associated with a user/subscriber using a line/link/connection to computes Erlang for congestion control).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of calls or interarrival time, as taught by Kraushaar in the system of Soumiya, so that it would provide accurate measuring/determining of congestion and non-congestion periods; see Kraushaar abstract; see

col. 2, line 1-41; also by measuring/determining interarrival time, it enables to computes Erlang to determine link/lines/trunk utilizations.

Regarding Claim 34, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average time between arrivals of calls.

However, measuring/determining an average time between arrivals of calls, which is well known in the art as interarrival time, which is used to computes Erlang (i.e. call hours). In particular, Kraushaar teaches an average time between arrivals of calls made by one or more users using said link (see col. 1, line 60-45; see col. 2, line 60-67; average time between call arrivals is called interval arrival, note that each call is associated with a user/subscriber using a line/link/connection to computes Erlang for congestion control).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of calls or interarrival time, as taught by Kraushaar in the system of Soumiya, so that it would provide accurate measuring/determining of congestion and non-congestion periods; see Kraushaar abstract; see col. 2, line 1-41; also by measuring/determining interarrival time, it enables to computes Erlang to determine link/lines/trunk utilizations.

Regarding Claim 47, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average time between arrivals of calls.

However, measuring/determining an average time between arrivals of calls, which is well known in the art as interarrival time, which is used to computes Erlang (i.e. call hours). In particular, Kraushaar teaches an average time between arrivals of calls made by one or more users using said link (see col. 1, line 60-45; see col. 2, line 60-67; average time between call arrivals is called interval arrival, note that each call is associated with a user/subscriber using a line/link/connection to computes Erlang for congestion control).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of calls or interarrival time, as taught by Kraushaar in the system of Soumiya, so that it would provide accurate measuring/determining of congestion and non-congestion periods; see Kraushaar abstract; see col. 2, line 1-41; also by measuring/determining interarrival time, it enables to computes Erlang to determine link/lines/trunk utilizations.

11. Claims 3,22, 35 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Mashinksy (US 20050111647A1).

Regarding Claim 3, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average duration of calls.

However, Mashinksy teaches determining an average duration of calls made by one or more users using said link (see FIG. 1, determining an average call length/duration made by

customers at calling locations 12 and 14 using the a link/line; see page 6, paragraph 65; see page 2, paragraph 27).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration of calls, as taught by Mashinksy in the system of Soumiya, so that it would enable to determine least/better cost route/link and to determine better quality route/link for transmission; see Mashinksy see page 2, paragraph 12-13; see page 6, paragraph 65.

Regarding Claim 22, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average duration of calls.

However, Mashinksy teaches determining an average duration of calls made by one or more users using said link (see FIG. 1, determining an average call length/duration made by customers at calling locations 12 and 14 using the a link/line; see page 6, paragraph 65; see page 2, paragraph 27).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration of calls, as taught by Mashinksy in the system of Soumiya, so that it would enable to determine least/better cost route/link and to determine better quality route/link for transmission; see Mashinksy see page 2, paragraph 12-13; see page 6, paragraph 65.

Regarding Claim 35, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average duration of calls.

However, Mashinksy teaches determining an average duration of calls made by one or more users using said link (see FIG. 1, determining an average call length/duration made by customers at calling locations 12 and 14 using the a link/line; see page 6, paragraph 65; see page 2, paragraph 27).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration of calls, as taught by Mashinksy in the system of Soumiya, so that it would enable to determine least/better cost route/link and to determine better quality route/link for transmission; see Mashinksy see page 2, paragraph 12-13; see page 6, paragraph 65.

Regarding Claim 48, Soumiya discloses calls made by one or more users using said link (see FIG. 18, calls/connection requests are made by users/subscribers using line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average duration of calls.

However, Mashinksy teaches determining an average duration of calls made by one or more users using said link (see FIG. 1, determining an average call length/duration made by customers at calling locations 12 and 14 using the a link/line; see page 6, paragraph 65; see page 2, paragraph 27).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration of calls, as taught by Mashinksy in the system of Soumiya, so that it would enable to determine least/better cost route/link and to determine better quality route/link for transmission; see Mashinksy see page 2, paragraph 12-13; see page 6, paragraph 65.

12. Claims 4,23,36 and 49 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of VanDervort (US 5,699,346).

Regarding Claim 4, Soumiya discloses arrivals of packets on said link (see FIG. 18, cells are arriving on the line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average time between arrivals of packets.

However, VanDervort teaches determining an average time between arrivals of packets on said link (see col. 13, line 35-45; see col. 14, line 50-65; see col. 17, line 15-21; measuring by averaging intercell arrival time between arrival of cells during a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of packets, as taught by VanDervort in the system of Soumiya, so that it would measure and ensure the conformity to service agreement; see VanDervort col. 5, line 25-45.

Regarding Claim 23, Soumiya discloses arrivals of packets on said link (see FIG. 18, cells are arriving on the line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average time between arrivals of packets.

However, VanDervort teaches determining an average time between arrivals of packets on said link (see col. 13, line 35-45; see col. 14, line 50-65; see col. 17, line 15-21; measuring by averaging intercell arrival time between arrival of cells during a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of packets, as taught by VanDervort in the system of Soumiya, so that it would measure and ensure the conformity to service agreement; see VanDervort col. 5, line 25-45.

Regarding Claim 36, Soumiya discloses arrivals of packets on said link (see FIG. 18, cells are arriving on the line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average time between arrivals of packets.

However, VanDervort teaches determining an average time between arrivals of packets on said link (see col. 13, line 35-45; see col. 14, line 50-65; see col. 17, line 15-21; measuring by averaging intercell arrival time between arrival of cells during a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of packets, as taught by VanDervort in the system of Soumiya, so that it would measure and ensure the conformity to service agreement; see VanDervort col. 5, line 25-45.

Regarding Claim 49, Soumiya discloses arrivals of packets on said link (see FIG. 18, cells are arriving on the line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average time between arrivals of packets.

However, VanDervort teaches determining an average time between arrivals of packets on said link (see col. 13, line 35-45; see col. 14, line 50-65; see col. 17, line 15-21; measuring by averaging intercell arrival time between arrival of cells during a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average time between arrivals of packets, as taught by VanDervort in the system of Soumiya, so that it would measure and ensure the conformity to service agreement; see VanDervort col. 5, line 25-45.

13. Claims 5,24,37 and 50 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Depelteau (US006118764A).

Regarding Claim 5, Soumiya discloses packets are transmitted relatively continuously on said link (see FIG. 18, cells are transmitted continuously on the line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average duration period during which packets are transmitted.

However, Depelteau teaches determining an average duration period which packets are transmitted relatively continuously on said link (see col. 5, line 54-60; see col. 6, line 39-67; see col. 7, line 30-34; determining average cell interdeparture time which cells are transmitted continuously over a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration period during which packets are

transmitted, as taught by Depelteau in the system of Soumiya, so that it would provide controlling the flow of ATM cells; see Depelteau col. 2, line 5-15.

Regarding Claim 24, Soumiya discloses packets are transmitted relatively continuously on said link (see FIG. 18, cells are transmitted continuously on the line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average duration period during which packets are transmitted.

However, Depelteau teaches determining an average duration period which packets are transmitted relatively continuously on said link (see col. 5, line 54-60; see col. 6, line 39-67; see col. 7, line 30-34; determining average cell interdeparture time which cells are transmitted continuously over a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration period during which packets are transmitted, as taught by Depelteau in the system of Soumiya, so that it would provide controlling the flow of ATM cells; see Depelteau col. 2, line 5-15.

Regarding Claim 37, Soumiya discloses packets are transmitted relatively continuously on said link (see FIG. 18, cells are transmitted continuously on the line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average duration period during which packets are transmitted.

However, Depelteau teaches determining an average duration period which packets are transmitted relatively continuously on said link (see col. 5, line 54-60; see col. 6, line 39-67; see

col. 7, line 30-34; determining average cell interdeparture time which cells are transmitted continuously over a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration period during which packets are transmitted, as taught by Depelteau in the system of Soumiya, so that it would provide controlling the flow of ATM cells; see Depelteau col. 2, line 5-15.

Regarding Claim 50, Soumiya discloses packets are transmitted relatively continuously on said link (see FIG. 18, cells are transmitted continuously on the line 22n; see col. 16, line 46-64).

Soumiya does not explicitly disclose an average duration period during which packets are transmitted.

However, Depelteau teaches determining an average duration period which packets are transmitted relatively continuously on said link (see col. 5, line 54-60; see col. 6, line 39-67; see col. 7, line 30-34; determining average cell interdeparture time which cells are transmitted continuously over a connection/link).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an average duration period during which packets are transmitted, as taught by Depelteau in the system of Soumiya, so that it would provide controlling the flow of ATM cells; see Depelteau col. 2, line 5-15.

14. Claims 6,25,38 and 51 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Takeuchi (US 20040062256A1).

Regarding Claim 6, Soumiya discloses determining bandwidth as set forth above in claim 1.

Soumiya does not explicitly disclose based on a specific number of users.

However, Takeuchi teaches determining bandwidth amount is based on a specified number of users (see page 2, paragraph 32-33; see page 3, paragraph 48; see page 4, paragraph 50; allocating bandwidth according to the number of users).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide allocation bandwidth base on a specific number of users, as taught by Takeuchi in the system of Soumiya, so that it would provide bandwidth control on user basis; see Takeuchi col. 2, line 5-15.

Regarding Claim 25, Soumiya discloses determining bandwidth as set forth above in claim 20.

Soumiya does not explicitly disclose based on a specific number of users.

However, Takeuchi teaches determining bandwidth amount is based on a specified number of users (see page 2, paragraph 32-33; see page 3, paragraph 48; see page 4, paragraph 50; allocating bandwidth according to the number of users).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide allocation bandwidth base on a specific number of users, as taught by Takeuchi in the system of Soumiya, so that it would provide bandwidth control on user basis; see Takeuchi col. 2, line 5-15.

Regarding Claim 38, Soumiya discloses determining bandwidth as set forth above in claim 33.

Soumiya does not explicitly disclose based on a specific number of users.

However, Takeuchi teaches determining bandwidth amount is based on a specified number of users (see page 2, paragraph 32-33; see page 3, paragraph 48; see page 4, paragraph 50; allocating bandwidth according to the number of users).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide allocation bandwidth base on a specific number of users, as taught by Takeuchi in the system of Soumiya, so that it would provide bandwidth control on user basis; see Takeuchi col. 2, line 5-15.

Regarding Claim 51, Soumiya discloses determining bandwidth as set forth above in claim 46.

Soumiya does not explicitly disclose based on a specific number of users.

However, Takeuchi teaches determining bandwidth amount is based on a specified number of users (see page 2, paragraph 32-33; see page 3, paragraph 48; see page 4, paragraph 50; allocating bandwidth according to the number of users).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide allocation bandwidth base on a specific number of users, as taught by Takeuchi in the system of Soumiya, so that it would provide bandwidth control on user basis; see Takeuchi col. 2, line 5-15.

15. Claims 7,9,26,28,39,41,52,54 and 59 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Fodor (US006788646B1).

Regarding Claim 7, Soumiya discloses determining bandwidth as set forth above in claim 1.

Soumiya does not explicitly disclose based on grade of service (GOS) factor.

However, Fodor teaches determining bandwidth amount is based on grade of service (GOS) factor (see col. 3, line 10-15; see col. 10, line 1-7; determining link capacity/bandwidth according to grade of service (GOS) factor/ parameter).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide based on grade of service (GOS) factor, as taught by Fodor in the system of Soumiya, so that it would enable/ensure that the call GOS level is guaranteed for traffic on the link; see Fodor col. 3, line 10-16.

Regarding Claim 9, Soumiya discloses determining bandwidth as set forth above in claim 1.

Soumiya does not explicitly disclose based on a specified maximum call blocking probability requirement.

However, Fodor teaches determining bandwidth amount is based on a specified maximum call blocking probability requirement (see col. 3, line 25-33; see col. 10, line 8-38; determining link capacity/bandwidth according to predetermined/specify call blocking probability, B^{max}).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specified maximum call blocking probability requirement, as taught by Fodor in the system of Soumiya, so that it would benefit to develop and utilize a link capacity/bandwidth for optimization; see Fodor col. 2, line 48-50.

Regarding Claim 26, Soumiya discloses determining bandwidth as set forth above in claim 20.

Soumiya does not explicitly disclose based on grade of service (GOS) factor.

However, Fodor teaches determining bandwidth amount is based on grade of service (GOS) factor (see col. 3, line 10-15; see col. 10, line 1-7; determining link capacity/bandwidth according to grade of service (GOS) factor/ parameter).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide based on grade of service (GOS) factor, as taught by Fodor in the system of Soumiya, so that it would enable/ensure that the call GOS level is guaranteed for traffic on the link; see Fodor col. 3, line 10-16.

Regarding Claim 28, Soumiya discloses determining bandwidth as set forth above in claim 20.

Soumiya does not explicitly disclose based on a specified maximum call blocking probability requirement.

However, Fodor teaches determining bandwidth amount is based on a specified maximum call blocking probability requirement (see col. 3, line 25-33; see col. 10, line 8-38; determining link capacity/bandwidth according to predetermined/specify call blocking probability, B^{max}).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specified maximum call blocking probability requirement, as taught by Fodor in the system of Soumiya, so that it would benefit to develop and utilize a link capacity/bandwidth for optimization; see Fodor col. 2, line 48-50.

Regarding Claim 39, Soumiya discloses determining bandwidth as set forth above in claim 33.

Soumiya does not explicitly disclose based on grade of service (GOS) factor.

However, Fodor teaches determining bandwidth amount is based on grade of service (GOS) factor (see col. 3, line 10-15; see col. 10, line 1-7; determining link capacity/bandwidth according to grade of service (GOS) factor/parameter).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide based on grade of service (GOS) factor, as taught by Fodor in the system of Soumiya, so that it would enable/ensure that the call GOS level is guaranteed for traffic on the link; see Fodor col. 3, line 10-16.

Regarding Claim 41, Soumiya discloses determining bandwidth as set forth above in claim 33.

Soumiya does not explicitly disclose based on a specified maximum call blocking probability requirement.

However, Fodor teaches determining bandwidth amount is based on a specified maximum call blocking probability requirement (see col. 3, line 25-33; see col. 10, line 8-38; determining link capacity/bandwidth according to predetermined/specify call blocking probability, B^{max}).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specified maximum call blocking probability requirement, as taught by Fodor in the system of Soumiya, so that it would benefit to develop and utilize a link capacity/bandwidth for optimization; see Fodor col. 2, line 48-50.

Regarding Claim 52, Soumiya discloses determining bandwidth as set forth above in claim 46.

Soumiya does not explicitly disclose based on grade of service (GOS) factor.

However, Fodor teaches determining bandwidth amount is based on grade of service (GOS) factor (see col. 3, line 10-15; see col. 10, line 1-7; determining link capacity/bandwidth according to grade of service (GOS) factor/parameter).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide based on grade of service (GOS) factor, as taught by Fodor in the system of Soumiya, so that it would enable/ensure that the call GOS level is guaranteed for traffic on the link; see Fodor col. 3, line 10-16.

Regarding Claim 54, Soumiya discloses determining bandwidth as set forth above in claim 46.

Soumiya does not explicitly disclose based on a specified maximum call blocking probability requirement.

However, Fodor teaches determining bandwidth amount is based on a specified maximum call blocking probability requirement (see col. 3, line 25-33; see col. 10, line 8-38; determining link capacity/bandwidth according to predetermined/specify call blocking probability, B^{max}).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specified maximum call blocking probability requirement, as taught by Fodor in the system of Soumiya, so that it would benefit to develop and utilize a link capacity/bandwidth for optimization; see Fodor col. 2, line 48-50.

Regarding Claim 59, Soumiya discloses an apparatus for determining an amount of bandwidth needed on a link (see FIG. 1, 18, 27, ATM network system 3C-n processing for bandwidth calculating for a line/link 22, see col. 9, line 5-15; see col. 16, line 46-54; see col. 16, line 64-69), comprising:

a network interface (see FIG. 18, Line Interface 22n; see FIG. 27) that is coupled to a data network (see FIG. 27, connecting/coupling to ATM network 3) for receiving one or more packet flows therefrom (see col. 1, line 50 to col. 2, line 60; see col. 16, line 46-65; to receiving flows of cells);

a processor (see FIG. 18, a combined controlling system of controller 23 and admission controller 24); and one or more stored sequences of instructions (see FIG. 18, memory 25 stores the sequence of instructions/programs) which, when executed by the processor (see FIG. 18, processed/executed by a combined controlling system of controller 23 and admission controller 24), cause the processor to carry out the steps of (see FIG. 1, 18, causing the combined controlling system to process the methods/steps for ATM network system, also see FIG. 19-20; see col. 9, line 5-15; see col. 16, line 64-69):

a number of users to be supported by a communication link (see FIG. 18,27; a number of users/subscribers, where each user/subscriber (see FIG. 18), using the communication link/line, is associated with each call; see col. 7, line 11-16; see col. 7, line 50-60; see col. 9, line 21-40; see col. 10, line 31-40);

receiving one or more Quality of Service (QoS) factors (see col. 10, line 30-60; receiving guaranteed QOS level/parameter);

determining user behavior relative to the communication link; determining characteristics of traffic on the communication link;

determining (see FIG. 1, determining/calculating by required bandwidth calculator 13), based on both the user behavior (see FIG. 1, according to difference of average cell rate Ra and peak cell rate Rp which is declared by the user (i.e. user behavior/activities/act relative to the line/connection) from the cell rate comparator 11) and the traffic characteristics (see FIG. 1, and traffic class from traffic class judging portion 12), a minimum amount of bandwidth required for the communication link to support the number of users while satisfying the QoS factor (see col. 9, line 5-45; see col. 10, line 30-60; calculating required minimum bandwidth for the link/line for the users/subscribers associated with the class with guaranteed/satisfied QoS); and

storing the determined bandwidth amount in memory (see FIG. 1, storing calculated bandwidth in the estimated bandwidth storage portion 15; see col. 9, line 25-30; also see FIG. 18, storing bandwidth in memory 25; see col. 16, line 55-63)

Soumiya does not explicitly disclose receiving a number of users, receiving one or more Grade of Service (GoS) factors; satisfying the GoS factor.

However, Fodor teaches receiving a number of users to be supported by the communication link (see col. 5, line 36-47; see col. 1, line 45-67; receiving number of users for a link/line who will share the bandwidth);

receiving one or more Grade of Service (GoS) factors (see col. 3, line 10-15; see col. 10, line 1-7; receiving grade of service (GOS) factor/parameters);

receiving one or more Quality of Service (QoS) factors (see col. 3, line 41-45; see col. 7, line 26-35; receiving QoS factor/parameters);

determining a minimum amount of bandwidth required for the communication link to support the number of users while satisfying the QoS and GoS factors (see col. 3, line 10-15,34-45, 60 to col. 4, line 2; see col. 10, line 1-17, determining minimum accepted/required throughput/bandwidth for the a link/line for a number of users with guaranteed/satisfied QoS and GoS input/parameters).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide disclose receiving a number of users, receiving one or more Grade of Service (GoS) factors; satisfying the GoS factor, as taught by Fodor in the system of Soumiya, so that it would benefit to develop and utilize a link capacity/bandwidth for optimization; see Fodor col. 2, line 48-50.

16. Claims 11,30,43 and 56 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Ishikawa (US005838671A).

Regarding Claim 11, Soumiya discloses determining bandwidth relative to said link as set forth above in claim 1.

Soumiya does not explicitly disclose based a probability that a specified number of users are suing said link when a specified maximum call blocking required is satisfied.

However, Ishikawa teaches said amount is based on a probability that a specified number of users are using said link when a specified maximum call blocking required is satisfied relative to said link (see FIG. 6, capacity/bandwidth is determined according to the probability of number connectable users within quality when maintaining/satisfying maximum blocking probability 1%; see col. 9, line 5-20; see col. 12, line 10-50; see col. 16, line 63 to col. 17, line 11).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide determining based a probability that a specified number of users are suing said link when a specified maximum call blocking required is satisfied, as taught by Ishikawa in the system of Soumiya, so that it would provide call admission control flexibly deal with a traffic variation and stratify a given blocking probability while guaranteeing the quality; see Ishikawa col. 2, line 45-56.

Regarding Claim 30, Soumiya discloses determining bandwidth relative to said link as set forth above in claim 20.

Soumiya does not explicitly disclose based a probability that a specified number of users are suing said link when a specified maximum call blocking required is satisfied.

However, Ishikawa teaches said amount is based on a probability that a specified number of users are using said link when a specified maximum call blocking required is satisfied relative to said link (see FIG. 6, capacity/bandwidth is determined according to the probability of number connectable users within quality when maintaining/satisfying maximum blocking probability 1%; see col. 9, line 5-20; see col. 12, line 10-50; see col. 16, line 63 to col. 17, line 11).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide determining based a probability that a specified number of users are suing said link when a specified maximum call blocking required is satisfied, as taught by Ishikawa in the system of Soumiya, so that it would provide call admission control flexibly deal with a traffic variation and stratify a given blocking probability while guaranteeing the quality; see Ishikawa col. 2, line 45-56.

Regarding Claim 43, Soumiya discloses determining bandwidth relative to said link as set forth above in claim 33.

Soumiya does not explicitly disclose based a probability that a specified number of users are suing said link when a specified maximum call blocking required is satisfied.

However, Ishikawa teaches said amount is based on a probability that a specified number of users are using said link when a specified maximum call blocking required is satisfied relative to said link (see FIG. 6, capacity/bandwidth is determined according to the probability of number connectable users within quality when maintaining/satisfying maximum blocking probability 1%; see col. 9, line 5-20; see col. 12, line 10-50; see col. 16, line 63 to col. 17, line 11).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide determining based a probability that a specified number of users are suing said link when a specified maximum call blocking required is satisfied, as taught by Ishikawa in the system of Soumiya, so that it would provide call admission control flexibly deal with a traffic variation and stratify a given blocking probability while guaranteeing the quality; see Ishikawa col. 2, line 45-56.

Regarding Claim 56, Soumiya discloses determining bandwidth relative to said link as set forth above in claim 46.

Soumiya does not explicitly disclose based a probability that a specified number of users are suing said link when a specified maximum call blocking required is satisfied.

However, Ishikawa teaches said amount is based on a probability that a specified number of users are using said link when a specified maximum call blocking required is satisfied relative to said link (see FIG. 6, capacity/bandwidth is determined according to the probability of number

connectable users within quality when maintaining/satisfying maximum blocking probability 1%; see col. 9, line 5-20; see col. 12, line 10-50; see col. 16, line 63 to col. 17, line 11).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide determining based a probability that a specified number of users are suing said link when a specified maximum call blocking required is satisfied, as taught by Ishikawa in the system of Soumiya, so that it would provide call admission control flexibly deal with a traffic variation and stratify a given blocking probability while guaranteeing the quality; see Ishikawa col. 2, line 45-56.

17. Claims 12,31,44 and 57 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Morrison (US005854903A).

Regarding Claim 12, Soumiya discloses determining bandwidth based when packet is send through (see FIG. 18, 27, a cell is send through link/line; see col. 16, line 46-64; see col. 1, line 50-66) that has a specified amount of bandwidth (see FIG. 2, a link/line has a bandwidth; see col. 3667) and is being used by a specified number of users (see FIG. 18, 27, and utilize by a number of users/subscribers, where each user/subscriber (see FIG. 18), using the link/line, is associated with each call; see col. 7, line 11-16; see col. 7, line 50-60; see col. 9, line 21-40; see col. 10, line 31-40).

Soumiya does not explicitly disclose based on a probability that a packet will be lost.

However, determining bandwidth based upon a probability of packet lost is so well known in the art. In particular, Morrison discloses determining based on a probability that a packet will be lost when said packet is send through a link that: has a specific amount of

bandwidth; and is being used by a specific number of users (see col. 1, line 52-60; see col. 56-65; see col. 4, line 30-40; determining link-capacity/bandwidth according to cell loss probability for a cell that will be lost when traverses over the link, and has a predefined recourses/capacity and used by users of the network).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a probability that a packet will be lost when said packet is send through a link that: has a specific amount of bandwidth; and is being used by a specific number of users, as taught by Morrison in the system of Soumiya, so that it would provide network optimization and efficiently support communication network; see Morrison col. 1, line 63-67; see col. 2, line 56-65.

Regarding Claim 31 Soumiya discloses determining bandwidth based when packet is send through (see FIG. 18, 27, a cell is send through link/line; see col. 16, line 46-64; see col. 1, line 50-66) that has a specified amount of bandwidth (see FIG. 2, a link/line has a bandwidth; see col. 3667) and is being used by a specified number of users (see FIG. 18, 27, and utilize by a number of users/subscribers, where each user/subscriber (see FIG. 18), using the link/line, is associated with each call; see col. 7, line 11-16; see col. 7, line 50-60; see col. 9, line 21-40; see col. 10, line 31-40).

Soumiya does not explicitly disclose based on a probability that a packet will be lost.

However, determining bandwidth based upon a probability of packet lost is so well known in the art. In particular, Morrison discloses determining based on a probability that a packet will be lost when said packet is send through a link that: has a specific amount of bandwidth; and is being used by a specific number of users (see col. 1, line 52-60; see col. 56-

65; see col. 4, line 30-40; determining link-capacity/bandwidth according to cell loss probability for a cell that will be lost when traverses over the link, and has a predefined recourses/capacity and used by users of the network).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a probability that a packet will be lost when said packet is send through a link that: has a specific amount of bandwidth; and is being used by a specific number of users, as taught by Morrison in the system of Soumiya, so that it would provide network optimization and efficiently support communication network; see Morrison col. 1, line 63-67; see col. 2, line 56-65.

Regarding Claim 44, Soumiya discloses determining bandwidth based when packet is send through (see FIG. 18, 27, a cell is send through link/line; see col. 16, line 46-64; see col. 1, line 50-66) that has a specified amount of bandwidth (see FIG. 2, a link/line has a bandwidth; see col. 3667) and is being used by a specified number of users (see FIG. 18, 27, and utilize by a number of users/subscribers, where each user/subscriber (see FIG. 18), using the link/line, is associated with each call; see col. 7, line 11-16; see col. 7, line 50-60; see col. 9, line 21-40; see col. 10, line 31-40).

Soumiya does not explicitly disclose based on a probability that a packet will be lost.

However, determining bandwidth based upon a probability of packet lost is so well known in the art. In particular, Morrison discloses determining based on a probability that a packet will be lost when said packet is send through a link that: has a specific amount of bandwidth; and is being used by a specific number of users (see col. 1, line 52-60; see col. 56-65; see col. 4, line 30-40; determining link-capacity/bandwidth according to cell loss probability

for a cell that will be lost when traverses over the link, and has a predefined recourses/capacity and used by users of the network).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a probability that a packet will be lost when said packet is send through a link that: has a specific amount of bandwidth; and is being used by a specific number of users, as taught by Morrison in the system of Soumiya, so that it would provide network optimization and efficiently support communication network; see Morrison col. 1, line 63-67; see col. 2, line 56-65.

Regarding Claim 57, Soumiya discloses determining bandwidth based when packet is send through (see FIG. 18, 27, a cell is send through link/line; see col. 16, line 46-64; see col. 1, line 50-66) that has a specified amount of bandwidth (see FIG. 2, a link/line has a bandwidth; see col. 3667) and is being used by a specified number of users (see FIG. 18, 27, and utilize by a number of users/subscribers, where each user/subscriber (see FIG. 18), using the link/line, is associated with each call; see col. 7, line 11-16; see col. 7, line 50-60; see col. 9, line 21-40; see col. 10, line 31-40).

Soumiya does not explicitly disclose based on a probability that a packet will be lost.

However, determining bandwidth based upon a probability of packet lost is so well known in the art. In particular, Morrison discloses determining based on a probability that a packet will be lost when said packet is send through a link that: has a specific amount of bandwidth; and is being used by a specific number of users (see col. 1, line 52-60; see col. 56-65; see col. 4, line 30-40; determining link-capacity/bandwidth according to cell loss probability

for a cell that will be lost when traverses over the link, and has a predefined recourses/capacity and used by users of the network).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a probability that a packet will be lost when said packet is send through a link that: has a specific amount of bandwidth; and is being used by a specific number of users, as taught by Morrison in the system of Soumiya, so that it would provide network optimization and efficiently support communication network; see Morrison col. 1, line 63-67; see col. 2, line 56-65.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ian N. Moore
Examiner
Art Unit 2616

7-20-07